

WQB "Wide Aperture Quad" for Main Injector

28 July 2005, 9:00 AM

IB2 conference room

Attendees: Linda Alsip, Bruce Brown, Weiren Chou, TJ Gardner, Hank Glass, Dave Harding, Jim Jablonski, Bill Robotham, Linda Valerio

Design

Linda V. reported that everyone agreed to the use of flanges on both ends of the BPM. Clarification on the BPM alignment tolerances remains an open issue.

Bill R. reported that a problem presented itself in the first few minutes of testing WQB001 at MTF. During the initial ramping of current from 0-3600 amps repeatedly, the insulation covering the bus bar at the top of the magnet showed signs of "browning" due to overheating. It was calculated that the 5/8" dia. solid round copper bar used as the bus jumper was dissipating ~540 watts. We will redesign this jumper to increase the cross section area thus reducing the resistance. That should also promote better conductive cooling by the water passages at each end. Dave suggested a value as low as ~50 watts, but Bill and Jim will determine an appropriate size to keep the temperature rise in the crossover under control.

All but one assembly drawing have been released, though more will be needed with the crossover bus.

Procurement

All parts (except new releases) are available for the first four magnets and either in inspection or arriving shortly for the balance of the magnets.

Fabrication

WQB001 is at MTF. Low amperage testing will continue until corrective measures are made to 002, then full testing will be performed on 002.

WQB002 is nearing completion with the exception of the final painting and the revised bus work.

7 of 8 coils are wound for magnets 003 and 004. The potting of 003's coils is complete.

Core stacking for 003 is complete and two coil-in-core assemblies are mounted in the assembly roll-over fixture.

Schedule

The new bus design and procurement is estimated to add two weeks to the completion of WQB002. 003 and 004 are ahead of schedule.

MTF Measurement plan

Low amperage testing will start on WQB001 and continue until 002 is delivered.

Next meeting: 4 August 2005, 9:00 in the Industrial Building 2 conference room.